

### **REMARKS**

Claims 1, 2, 4-10, and 12-16, as amended, and new claims 17-20 are pending for the Examiner's review and consideration. Claims 3 and 11 have been cancelled without prejudice. Claims 1 and 8-10 have been amended to include the feature of claim 11, which recites that the amount of fluorescent dye in the recording layer is about 0.1 weight percent to 10 weight percent of the recording layer. Claim 1 has further been amended to recite the specific free radical generating compounds of claim 3. Claim 10 has also been amended to recite a compound capable of generating free radicals as a result of decomposition under heating induced by laser-radiation absorption by the fluorescent dye (*See, e.g.*, Specification at page 5, lines 10-12). Claims 1, 4-6, and 9 have been amended to correct typographical and grammatical errors. Claims 12 and 13 have been amended to change their dependency from claim 3 to claim 1. New claims 17 and 18 recite that the fluorescent dye is present in an amount of 0.1 weight percent to 10 weight percent of the recording layer (*See, e.g.*, Specification at page 6, line 30). New claims 19 and 20 are directed to the thickness of the recording layer. In particular, claim 17 recites a thickness of 100nm to 1000 nm, while claim 18 recites a thickness of 200 nm to 500 nm (*See, e.g.*, Specification at page 6, line 25). No new matter or new issues have been introduced by any of the amendments or new claims herein, such that entry of the claims is warranted at this time.

Claims 8 and 9 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,185,233 to Santo ("Santo") for the reasons set forth on pages 2-3 of the Office Action. Santo relates to optical recording mediums that include a dye compound capable of absorbing recording light and a compound selected from a free radical generating compound capable of generating free radicals through decomposition by the heat generated by the absorption of the recoding light by the dye compound (Col. 2, lines 43-52). The content of the dye compound in the recording layer is in a range of 40 to 99.99%, since a content of lower than 40% cannot provide sufficient light absorption for thermal free radical generation and sufficient light reflectance for the reproducing light (Col. 4, lines 36-44).

Claims 8 and 9 have been amended to recite about 0.1 weight percent to 10 weight percent of fluorescent dye in the recording layer, as the present invention surprisingly operates at even such low dye amounts. Santo therefore expressly discloses significantly greater amounts (at least four times greater) of dye than the presently recited invention. Consequently, Santo does not disclose or suggest each and every single feature of the claims, and therefore cannot anticipate the claims. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C. § 102(b) be reconsidered and withdrawn.

Claims 1-4, 7-9, and 11-16 were rejected under 35 U.S.C. § 103(a), as being obvious over Santo for the reasons set forth on page 4 of the Office Action. Applicants respectfully disagree.

Santo also fails to teach or suggest the amount of fluorescent dye now recited in the claims, as discussed above. A prior art reference must be considered in its entirety, *i.e.*, as a whole, including portions that would lead away from the claimed invention. *W.L. Gore & Assocs., Inc. v. Garlock*, 721 F.2d 1540 (Fed. Cir. 1993), *cert. denied* 469 U.S. 851 (1984). In fact, Santo effectively *teaches away* from the amounts of about 0.1-10 weight percent fluorescent dye recited in the claims. As discussed above, Santo expressly teaches that the recording layer must have at least 40% dye, since a content of lower than 40% "cannot provide sufficient light absorption for thermal free radical generation and sufficient light reflectance for the reproducing light." Santo suggests the claimed invention would be inoperative, yet it surprisingly and unexpectedly provides a beneficial DIP medium.

Applicants have surprisingly and unexpectedly discovered that such high amounts of dye are not required for the recording layer to function. Moreover, Santo does not teach or suggest introducing the fluorescent dye, compound, and film-forming polymer into a solvent as microcapsules less than 0.2 microns in size as is recited in claim 7. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be reconsidered and withdrawn, as a *prima facie* case of obviousness has not been made on the record.

Claims 1-9 and 11-16 were rejected under 35 U.S.C. § 103(a) as obvious over Santo in view of U.S. Patent No. 4,412,231 to Namba et al. ("Namba") for the reasons set forth on page 4 of the Office Action.

Namba relates to using a recording layer that contains an organic dye as a light absorber, where the dye is a mixed dye obtained by mixing a plurality of dyes having different light absorbing wavelengths from each other (Col. 2, lines 18-22). Namba teaches a recording layer that incorporates an organic dye as a light absorber in a base material or binder, a surface lubricating material and a deforming agent (Col. 2, lines 56-60). Namba teaches varying amounts of dye. For example, Namba teaches a dye:dye:binder ratio of 3:1:10 (Col. 5, lines 8-10), a dye:binder ratio of 1:10 (Col. 5, lines 14-16), a dye:dye:dye:binder ratio of 3:1:1:10 (Col. 5, lines 20-23), and a dye:dye:dye:dye:dye:binder ratio of 7.5:1:3:1.5:1.5:16.5 (Col. 5, lines 32-34). Thus, Namba does not expressly teach the amounts of dye in the recording layer itself, but only dye:binder ratios.

As such, Namba fails to remedy the deficiencies of Santo. In any case, as explained above, Santo expressly rejects the use of dye amounts lower than 40% because lower amounts cannot provide sufficient light absorption for thermal free radical generation and sufficient light reflectance for the reproducing light. Even if Namba did teach or suggest the claimed amounts of dye, one of ordinary skill in the art would not have been motivated to combine that amount with the teaching of Santo. If the proposed modification would render the Santo invention unsatisfactory for its intended purpose, then there was no suggestion or motivation to one of ordinary skill in the art to make the proposed modification. *In re Gordon*, 733 F.2d 900 (Fed. Cir. 1984). Therefore, the combination of Santo and Namba still fails to even suggest a sufficient motivation for the use of about 0.1-10% of fluorescent dye, as presently recited in the claims. Because even the combination of Santo and Namba does not teach or suggest the use of fluorescent dye in the recited amounts, particularly in combination with a free-radical generating compound as recited in claim 1, a *prima facie* case of obviousness has not been made. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be reconsidered and withdrawn.

Claims 1-16 were rejected under 35 U.S.C. § 103(a) as obvious over Santo in view of Namba combined with U.S. Patent No. 6,009,065 to Glushko et al. ("Glushko") and U.S. Patent No. 4,090,031 to Russell ("Russell") for the reasons set forth on page 5 of the Office Action. Glushko is alleged to teach multilayered optical recording media which uses fluorescent data layers separated by spacer layers. Russell is alleged to teach the use of differently colored materials that are separated by spacer layers or support materials.

As discussed above, the combination of Santo and Namba fails to teach or suggest the use of about 0.1-10% dye with a free-radical generating compound. Glushko and Russell do not remedy this deficiency. Glushko and Russell are relied on primarily for their teaching regarding the preparation of multilayer disks, *i.e.*, disks including spacer layers. Glushko and Russell, however, also do not teach the use of fluorescent dye in the recited amount together with a compound capable of generating free radicals as a result of decomposition under heating induced by laser-radiation absorption by the fluorescent dye. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be reconsidered and withdrawn as no *prima facie* case of obviousness has been made on the record.

Claims 1-16 were rejected under 35 U.S.C. § 103(a) as obvious over Santo, in view of Namba combined with Japanese abstract JP 02-076126 to Hashida et al. ("Hashida") and Russell for the reasons set forth on pages 5-6 of the Office Action. Hashida is alleged to

teach the use of plural fluorescent recording layers and the use of the differences in the lifetime of emission to differentiate between them.

Although Applicants question the hindsight nature of such a complicated rejection where no sufficient motivation to combine existed in the art of record, Applicants maintain that Hashida also fails to remedy the deficiencies of the combination of Santo and Namba. Further, like Glushko and Russell, Hashida fails to teach the specific amounts of fluorescent dye recited in the present claims. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C. § 103(a) be reconsidered and withdrawn as a *prima facie* case of obviousness has clearly not been shown in the record.

Claims 1, 3, 4, 7, 11, and 12 were rejected as anticipated by Japanese abstract JP 54-061541 to Tetsuo et al. ("Tetsuo") for the reasons set forth on page 6 of the Office Action. The Office Action points to three examples on page 3 for the teaching of an organic solvent, a polymeric binder, an oxidizing agent, and a merocyanine dye, which is alleged to be a fluorescent dye.

Tetsuo, as far as Applicants can tell from the translated abstract provided, does not teach the amounts of dye recited in the claims. Moreover, Tetsuo fails to teach all of the free radical generating compounds currently recited. Specifically, Tetsuo fails to teach azo-bisisobutyronitrile, p-bromobenzene diazohydroxide, triphenylmethylazibenzene, diazobenzoyl, nitrosoacetanilide. Since Tetsuo does not disclose each and every feature recited in the claims, it cannot anticipate the claims. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C. § 102(b) be reconsidered and withdrawn.

Claim 8 was rejected under 35 U.S.C. § 102(b) as anticipated by Japanese abstract JP 59-092448 to Sasaoka ("Sasaoka") for the reasons set forth on page 6 of the Office Action. The Office Action maintains that Sasaoka discloses that the Naphthol Green B, which is alleged to be inherently fluorescent, in the lower layer is bleached by the action of benzoyl peroxide in the upper layer.

Again, Sasaoka, as far as Applicants can tell from the translated abstract provided, does not teach the amounts of fluorescent dye recited in the claims. Sasaoka therefore does not disclose-much less suggest-each and every feature of the claimed invention, and cannot anticipate claim 8. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C. § 102(b) be reconsidered and withdrawn.

Claims 8 and 9 were rejected under 35 U.S.C. § 102(b) as anticipated by Japanese abstract JP-62-239436 to Santo ("JP-Santo") for the reasons set forth on page 6 of the Office Action. The disclosure of JP-Santo is similar to Santo, which was discussed

above. Therefore, JP-Santo, like Santo, does not teach or disclose the recited amount of dye in claims 8 and 9. Thus, JP-Santo, like Santo, cannot anticipate the claims. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C. § 102(b) be reconsidered and withdrawn.

Lastly, claims 1, 4, 7, 11, and 12 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 5,470,994 to Saeva et al. ("Saeva"), in view of the article "Triarylsulfonium Salts as Photoinitiators of Free Radical and Cationic Polymerization" by Crivello et al., J. Polymer Sci., Vol. 17, pp. 759-764 (1979) ("Crivello"). Saeva is stated to teach a mixture for coating an optical disc that includes a sulfonium salt and a fluorescent dye in polyvinylphenol. Crivello is relied on for its alleged teaching that the photodegradation of triarylsulfonium salts results in the production of cationic species and radical fragments.

Saeva relates to light sensitive sulfonium salts and the use of these salts as photoinitiators (Col. 1, lines 6-8). Example 5 of Saeva teaches a mixture of a sulfonium salt and an infrared-absorbing dye with polyvinylphenol as host polymer. A film of the mixture is then cast onto aluminized polyester film by spin coating to provide a film 5 microns in thickness. Saeva, in light of Crivello, teaches only sulfonium salts as possible radical generating compounds. Saeva does not disclose or even suggest azo-bisisobutyronitrile, p-bromobenzene diazohydroxide, triphenylmethylazibenzene, diazobenzoyl, nitrosoacetanilide, or peroxides, as presently recited in the claims. Saeva therefore cannot anticipate the claims as it does not disclose each and every feature recited. Accordingly, Applicants respectfully request that this rejection under 35 U.S.C. § 102(b) be reconsidered and withdrawn.

Accordingly, the entire application is now in condition for allowance, early notice of which would be appreciated. Should the Examiner not agree with the Applicants' position, then a personal or telephonic interview is respectfully requested to discuss any remaining issues and expedite the eventual allowance of the application.

Respectfully submitted,

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Date

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